

## PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

Goodwin, Mark  
WILSON GUNN M'CAW  
5th Floor, Blackfriars House  
Blackfriars House  
The Parsonage  
Manchester M9 2JA  
GRANDE BRETAGNE

10 MAR 2005

PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing (day/month/year)	08.03.2005
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Applicant's or agents file reference MG/LDP/25504.WO	IMPORTANT NOTIFICATION	
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International application No. PCT/GB 03/05391	International filing date (day/month/year) 11.12.2003	Priority date (day/month/year) 11.12.2002
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Applicant KAY-METZELER LIMITED ET AL.
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1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

#### 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filling translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international preliminary examining authority:	Authorized Officer
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European Patent Office  
D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
Fax: +49 89 2399 - 4465

Name and mailing address of the international preliminary examining authority:	Authorized Officer
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Salaün, M  
Tel. +49 89 2399-2126



## PATENT COOPERATION TREATY

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**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**  
 (PCT Article 36 and Rule 70)

JUN 2005

Applicant's or agent's file reference MG/LD/P/25504.WO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/05391	International filing date (day/month/year) 11.12.2003	Priority date (day/month/year) 11.12.2002
International Patent Classification (IPC) or both national classification and IPC A47C7/18		
Applicant KAY-METZELER LIMITED ET AL.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
  
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
 

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.
  
3. This report contains indications relating to the following items:
  - I  Basis of the opinion
  - II  Priority
  - III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV  Lack of unity of invention
  - V  Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI  Certain documents cited
  - VII  Certain defects in the international application
  - VIII  Certain observations on the international application

Date of submission of the demand  09.07.2004	Date of completion of this report  08.03.2005
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Lassen, S  Telephone No. +49 89 2399-2320



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB 03/05391

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-12 as originally filed

**Claims, Numbers**

1-13 received on 21.01.2005 with letter of 19.01.2005

**Drawings, Sheets**

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No.

PCT/GB 03/05391

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).  
*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*
6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	1-13
	No: Claims	
Inventive step (IS)	Yes: Claims	1-13
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB 03/05391

**Re item V**

1. The closest prior art is document CH-A-674 342 (hereinafter D1) that discloses a cushion suitable for use in an aircraft seat, said cushion comprising a foam structure (208) having a first region of a low-density flame retardant foam (208), a second region of a flame retardant foam (214) and a sealing barrier (212) disposed at the interface between said first and second regions, see e.g. Fig. 12 and the accompanying description. The subject-matter of claim 1 is distinguished from this teaching by the further requirement that the first region comprises foam having a density within the range from 8-12 kg/m<sup>3</sup>. By using lower density foam - all other things being equal - may be attained an overall weight reduction, such as is desirable per se in the context of an aircraft. In D1 the lower density limit is given to be 15 kg/m<sup>3</sup> and there is no suggestion or disclosure to the effect of using foam of less density. Also the other cited document is silent on this issue. Consequently, the subject-matter of claim 1 meets the requirements of Arts. 33(2) and (3) PCT. The same applies to independent claims 12 and 13, these claims including the cushion structure of claim 1. It is noted that claim 6 results in lack of clarity, Art. 6 PCT (and has to be deleted); the density range given there not falling under the scope of claim 1.

CLAIMS

1. A cushion suitable for use in an aircraft seat, said cushion comprising a foam structure having a first region of a low-density flame retardant foam, a second region of a flame retardant polyurethane foam and a sealing barrier disposed at the interface between said first and second regions, wherein said first region comprises foam having a density within the range from 8 to 12 kg/m<sup>3</sup>.
5. 2. A cushion as claimed in claim 1, wherein the second region encloses, at least in part, a core comprising the first region.
3. A cushion as claimed in claim 1 or claim 2, wherein the sealing barrier 10 comprises any of polyethylene, polyurethane or polyvinylchloride.
4. A cushion as claimed in any preceding claim, wherein the ratio of the volume of the first region to the second region is in the range from 20:80 to 80:20 (volume to volume).
5. A cushion as claimed in any preceding claim, wherein the ratio of the 15 volume of the first region to the second region is substantially 50:50 (volume to volume).
6. A cushion as claimed in any preceding claim, wherein the first region comprises foam having a density within the range of 5 to 15 kg/m<sup>3</sup>.
7. A cushion as claimed in any preceding claim, wherein the first region 20 comprises Melamine foam.
8. A cushion as claimed in any preceding claim, wherein the second region comprises a foam having a density within the range from 30 to 70 kg/m<sup>3</sup>.

9. A cushion as claimed in any preceding claim, wherein the second region comprises a foam having a density within the range from 40 to 65 kg/m<sup>3</sup>.
10. A cushion as claimed in any preceding claim, wherein the second region comprises at least one flame retardant additive.
- 5 11. A cushion as claimed in any preceding claim, wherein a fire blocking layer is provided over at least a part of the second region.
12. An aircraft seat comprising a cushion as defined in any of claims 1 to 11.
13. A method of manufacturing a cushion suitable for use in an aircraft seat as claimed in claim 1, said method comprising the steps of:
  - 10 (i) fabricating the low-density flame retardant foam into the desired configuration;
  - (ii) coating the surface of said low-density flame retardant foam with a sealant barrier; and
  - (iii) applying the flame retardant polyurethane foam to the sealing barrier.
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